

Tennessee Consolidated Retirement System

CITY OF FRANKLIN

GASB Statement No. 68

Actuarial Report

Reporting Date: June 30, 2019

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Certification

Accounting Governance Background

Governmental Accounting Standards Board (GASB) Statement No. 68 establishes financial reporting standards for state and local government employers with pension plans that are administered through trusts or equivalent arrangements. The objective of this statement is to improve the usefulness of the information included in employer financial statements.

Purpose and Use

This report has been prepared exclusively for the Tennessee Consolidated Retirement System. Actuarial computations under Statement No. 68 are for purposes of fulfilling employer governmental accounting requirements, and may not be appropriate for other purposes. The calculations reported herein have been made on a basis consistent with our understanding of the statement. Findley is not responsible for consequences resulting from the use of any part of this report without prior authorization or approval. This report provides actuarial advice and does not constitute legal, accounting, tax or investment advice. Determinations for other purposes, such as funding, bond ratings, or judging benefit security, may be significantly different from the results shown in this report.

Actuarial findings in this report are based on actuarial assumptions which reflect expected plan experience. Although the deviation of the actual future plan experience and the expected experience inherently creates some uncertainty with the results, in our opinion the actuarial assumptions reasonably reflect the expected future experience of the plan. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. All of these factors can cause volatility in the Net Pension Liability (Asset) over time.

Data

The calculations shown in this report have been prepared using employee data (including covered-employee payroll) and plan documentation furnished by the Tennessee Consolidated Retirement System as of June 30, 2018. Plan asset information was furnished by the Tennessee Consolidated Retirement System for the twelve month period ending June 30, 2018. While we have not audited the data, we have reviewed it for reasonableness and internal consistency. We have made reasonable assumptions with regard to any incomplete records, and to the best of our knowledge, there are no material limitations to the data provided. A complete summary of the census data utilized in this report is available upon request.

Assumptions, Methods, and Procedures

The results presented in this report comply with the assumptions, methods, and procedures under Statement No. 68. The results are based on a June 30, 2018 actuarial valuation date, a measurement date of June 30, 2018 and a reporting date of June 30, 2019. All assumptions are selected by the TCRS Board of Trustees. Statement No. 68 mandates the use of the Entry Age Normal actuarial funding method.

Subsequent Events

We are unaware of any subsequent events after the actuarial valuation date, measurement date or reporting date which would have a material effect on the results presented in this report.

Changes in Plan Provisions, Actuarial Assumptions, and Actuarial Methods

The mortality improvement assumption adopted with the 2016 experience study utilizes the most current projection scale published by the Society of Actuaries as of the actuarial valuation date. As of June 30, 2018, the projection scale was updated from Scale MP-2016 to Scale MP-2017. This change was included with other experience gains or losses.

No other changes were made to the plan provisions, actuarial assumptions or methods effective June 30, 2018.

Summaries of the plan provisions, actuarial assumptions and methods can be found in the Basis for Valuation section of this report.

Professional Qualifications

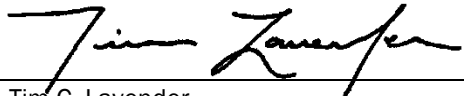
This report has been prepared under the supervision of Justin C. Thacker, a member of the American Academy of Actuaries, a Fellow of the Society of Actuaries, and a consulting actuary with Findley, who has met the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions herein. To the best of our knowledge this report has been prepared in accordance with generally accepted actuarial standards and our understanding of Government Accounting Standards Board Statement No. 68, including the overall appropriateness of the analysis, assumptions, and results and conforms to appropriate Standards of Practice as promulgated from time to time by the Actuarial Standards Board, which standards form the basis for the actuarial report. We are not aware of any direct or material indirect financial interest or relationship that could create, or appear to create, a conflict of interest that would impair the objectivity of our work. The undersigned are available to provide supplemental information or explanation.



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July 19, 2019

Date



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Basis for Valuation

Summary of Plan Provisions

The actuarial valuation includes all benefits provided by the Tennessee Consolidated Retirement System to the current active and inactive plan members. Benefit provisions include retirement, death and disability benefits. If applicable, post-retirement cost of living adjustments are included. Tennessee state law provides full documentation of the plan provisions. The Tennessee Consolidated Retirement System actuarial valuation funding report as of June 30, 2018 includes a summary of plan provisions.

Summary of Actuarial Assumptions and Methods

Investment Rate of Return

7.25 percent per annum, compounded annually

The long-term expected rate of return on pension plan investments was established by the TCRS Board of Trustees in conjunction with the June 30, 2016 actuarial experience study. A blend of future capital market projections and historical market returns was used in a building-block method in which a best-estimate of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) is developed for each major asset class. These best-estimates are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation of 2.5 percent. The best-estimates of geometric real rates of return and the TCRS investment policy target asset allocation for each major asset class are summarized in the following table:

Asset Class	Long-Term Expected Real Rate of Return	Target Allocation
U.S. equity	5.69%	31%
Developed market international equity	5.29%	14%
Emerging market international equity	6.36%	4%
Private equity and strategic lending	5.79%	20%
U.S. fixed income	2.01%	20%
Real estate	4.32%	10%
Short-term securities	0.00%	1%
		100%

Discount Rate

7.25 percent per annum, compounded annually

Paragraph 29 of Statement No. 68 provides for an alternative method to be used other than the projection of the pension plan's fiduciary net position based on projected contributions, benefit payments and investment earnings. The current contribution policy requires contributions of the normal cost plus a closed amortization of the unfunded liabilities (not to exceed 30 years from when the unfunded liability was created). In addition, the employer has a documented history of contributing 100 percent of the actuarially determined contribution requirement. The discount rate utilized assumes that employee contributions will be made at the current applicable rate and that contributions from the employer will be made at the actuarially determined contribution rate pursuant to an actuarial valuation in accordance with the pension funding policy of the TCRS Board of Trustees and as required to be paid by state statute. Based on these assumptions and the actuarial methodology adopted, the employer's fiduciary net position is expected to remain positive and to be available to make projected future benefit payments of current active and inactive members and to cover administrative expenses. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Actuarial Valuation Method

All liabilities and normal costs shown in this report are calculated based on the Entry Age Normal method.

Asset Valuation Method

Fair Market Value

Amortization Method for GASB Statement No. 68

Level Dollar

Amortization Period for GASB Statement No. 68

Investment gains or losses are amortized over five years. Experience gains or losses and changes in actuarial assumptions are amortized over the average working lifetime of all participants. Plan amendments are recognized immediately.

Additional Assumptions

The Tennessee Consolidated Retirement System actuarial valuation funding report as of June 30, 2018 includes a summary of actuarial assumptions.

Selection of Assumptions

The TCRS Board of Trustees selected the assumptions described above based on the review of plan experience in conjunction with an experience study conducted as of June 30, 2016. A complete plan experience study is conducted every four years.

GASB Statement No. 68

This section presents specific information required under Statement No. 68. The information in this report is to satisfy the employer reporting for the pension plan. This section contains the following:

- Summary of Key Actuarial Assumptions for Statement No. 68
- Employees Covered by Benefit Terms
- Contributions
- Schedule of Changes in the Net Pension Liability (Asset)
- Sensitivity of Net Pension Liability (Asset) to Changes in the Discount Rate
- Pension Expense (Income) and Deferred Outflows/Inflows of Resources
- Schedule of Changes in Net Pension Liability (Asset) and Related Ratios
- Schedule of Contributions

Fiduciary Net Position is the amount of assets available for benefits in the Pension Plan.

Total Pension Liability is the plan liability determined using assumptions listed in the Summary of Actuarial Assumptions.

Net Pension Liability (Asset) is the difference in the Total Pension Liability and the Fiduciary Net Position.

Summary of Key Actuarial Assumptions for GASB Statement No. 68

Reporting Date	June 30, 2019
Measurement Date	June 30, 2018
Actuarial Valuation Date	June 30, 2018
Actuarial cost method	Entry Age Normal
Amortization method	Level dollar
Asset valuation method	Fair market value
Inflation	2.5 percent
Salary increases	Graded salary ranges from 8.72 to 3.44 percent based on age, including inflation, averaging 4.00 percent
Investment rate of return	7.25 percent, net of investment expense, including inflation
Retirement age	Pattern of retirement determined by experience study
Mortality	Customized table based on actual experience including projection of mortality improvement using Scale MP-2017 (generational projection)
Cost of living adjustments	2.25 percent, if provided

Employees Covered by Benefit Terms

Inactive employees or beneficiaries currently receiving benefits	0
Inactive employees entitled to but not yet receiving benefits	20
Active employees	92
Total	<u>112</u>

A complete summary of the census data utilized in this report is available upon request.

Contributions

June 30, 2018 employer contributions	\$166,897
Employer contribution rate	6.50%

Schedule of Changes in Net Pension Liability (Asset)

	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (Asset) (a) - (b)
Balance at June 30, 2017	\$52,267	\$41,406	\$10,861
Service cost	124,730		124,730
Interest	12,799		12,799
Changes of benefit terms	0		0
Differences between expected and actual experience	146,886		146,886
Changes of assumptions	0		0
Contributions-employer		166,897	(166,897)
Contributions-employee		128,382	(128,382)
Net investment income		15,395	(15,395)
Benefit payments, including refunds of employee contributions	(906)	(906)	
Administrative expense		(6,220)	6,220
Other		0	0
Net changes	283,509	303,548	(20,039)
Balance at June 30, 2018	\$335,776	\$344,954	\$ (9,178)

Sensitivity of Net Pension Liability (Asset) to Changes in the Discount Rate

The following represents the net pension liability (asset) calculated using the stated discount rate, as well as what the net pension liability (asset) would be if it were calculated using a discount rate that is 1-percentage-point lower or 1-percentage-point higher than the current rate:

	1% Decrease (6.25%)	Current Rate (7.25%)	1% Increase (8.25%)
Net Pension Liability (Asset)	\$78,329	\$ (9,178)	\$ (75,148)

Pension Expense (Income) and Deferred Outflows/Inflows of Resources

	Pension Expense (Income)
	<hr/>
Service cost	\$124,730
Interest	12,799
Changes of benefit terms	0
Contributions-employees	(128,382)
Projected investment income	(13,447)
Recognition of experience (gains)/losses	14,689
Recognition of investment (gains)/losses	(540)
Recognition of assumption changes	0
Administrative expense	6,220
Other changes in plan fiduciary net position	0
	<hr/>
Pension Expense (Income)	\$16,069

For the year ended June 30, 2019, the recognized pension expense (income) is \$16,069. At June 30, 2019, deferred outflows of resources and deferred inflows of resources related to pensions are from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
	<hr/>	<hr/>
Differences between expected and actual experience	\$132,197	\$0
Changes of assumptions	0	0
Net difference between projected and actual earnings of pension plan investments	0	2,009
	<hr/>	<hr/>
Total	\$132,197	\$2,009

Amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Year ended June 30:	Outflows (a)	Inflows (b)	Amount Reported (a) + (b)
2019	\$14,689	\$(540)	\$14,149
2020	14,689	(540)	14,149
2021	14,689	(540)	14,149
2022	14,689	(540)	14,149
2023	14,689	(390)	14,299
2024	14,689	0	14,689
Thereafter	58,756	0	58,756

Development of Deferred Outflows and Deferred Inflows

	Original Amount	Date Established	Original Period	Amount Recognized in Expense	Deferred Outflow Amount	Deferred Inflow Amount
Experience	\$146,886	06/30/2019	10	\$14,689	\$132,197	\$0
(gains) / losses	\$0	06/30/2018	11	\$0	\$0	\$0
	\$0	06/30/2017	0	\$0	\$0	\$0
	\$0	06/30/2016	0	\$0	\$0	\$0
	\$0	06/30/2015	0	\$0	\$0	\$0
	Total			\$14,689	\$132,197	\$0
Investment	\$(1,948)	06/30/2019	5	\$(390)	\$0	\$(1,558)
(gains) / losses	\$(751)	06/30/2018	5	\$(150)	\$0	\$(451)
	\$0	06/30/2017	0	\$0	\$0	\$0
	\$0	06/30/2016	0	\$0	\$0	\$0
	\$0	06/30/2015	0	\$0	\$0	\$0
	Total			\$(540)	\$0	\$(2,009)
Assumption	\$0	06/30/2019	0	\$0	\$0	\$0
changes	\$0	06/30/2018	11	\$0	\$0	\$0
	\$0	06/30/2017	0	\$0	\$0	\$0
	\$0	06/30/2016	0	\$0	\$0	\$0
	\$0	06/30/2015	0	\$0	\$0	\$0
	Total			\$0	\$0	\$0

Schedule of Changes in the Net Pension Liability (Asset) and Related Ratios

(year shown is June 30 measurement date)

	2018
Total Pension Liability	
Service cost	\$124,730
Interest	12,799
Changes of benefit terms	0
Differences between expected and actual experience	146,886
Changes of assumptions	0
Benefit Payments, including refunds of employee contributions	(906)
Net Change in Total Pension Liability (Asset)	283,509
Total Pension Liability (Asset) - beginning	52,267
Total Pension Liability (Asset) - ending (a)	\$335,776
 Plan Fiduciary Net Position	
Contributions - employer	\$166,897
Contributions - employee	128,382
Net investment income	15,395
Benefit Payments, including refunds of employee contributions	(906)
Administrative expenses	(6,220)
Other	0
Net Change in Plan Fiduciary Net Position	\$303,548
 Plan Fiduciary Net Position - beginning	41,406
Plan Fiduciary Net Position - ending (b)	\$344,954
Net Pension Liability (Asset) - ending (a) - (b)	\$(9,178)
 Plan Fiduciary Net Position as a % of the Total Pension Liability	102.73%
Covered-employee payroll	\$2,567,642
Net Pension Liability (Asset) as a % of covered-employee payroll	(0.36%)

Schedule of Contributions

(Information to be inserted as of the employer's most recent fiscal year end)

	<u>2018</u>	<u>2019</u>
Actuarially determined contribution	\$166,897	(Entity to insert)
Contributions in relation to the actuarially determined contribution	166,897	(Entity to insert)
Contribution deficiency (excess)	<u>\$0</u>	<u>(Entity to insert)</u>
Covered-employee payroll	\$2,567,642	(Entity to insert)
Contributions as a percentage of covered-employee payroll	6.50%	(Entity to insert)

Notes to Schedule

Actuarially determined contribution rates for the year ended June 30, 2019 are based on the results of the June 30, 2017 actuarial valuation. Detailed below are the methods and assumptions used in the June 30, 2017 actuarial valuation.

Actuarial cost method	Entry Age Normal
Amortization method	Level dollar, closed (not to exceed 20 years)
Remaining amortization period (years)	Various
Asset valuation method	10-year smoothed within a 20 percent corridor to market value
Inflation	2.5 percent
Salary increases	Graded salary ranges from 8.72 to 3.44 percent based on age, including inflation, averaging 4.00 percent
Investment rate of return	7.25 percent, net of investment expense, including inflation
Retirement age	Pattern of retirement determined by experience study
Mortality	Customized table based on actual experience including projection of mortality improvement using Scale MP-2016 (generational projection)
Cost of living adjustments	2.25 percent, if provided